Method note — EPC reliability control: France vs England and Wales

A OneDpe (RIANN SAS) study. Figures frozen on 17 August 2026. Published on 3 November 2026.

> **Update of 11 October 2026.** The press page, the press release, the article and the graphics have been rewritten to be read: they do not quote this note's statements word for word, but every number they carry can be found here, with its scope. **This note remains the reference for the exact statements**, with their counts, intervals and caveats. OneDpe's four proposals appear on the press page, in the press release and in the article; this note carries none.

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> Source: ADEME, energy performance assessment data for existing dwellings (2021 method). Snapshot of 11 June 2026, 16,273,573 certificates, last assessment issued on 1 June 2026. Licence Ouverte / Open Licence 2.0.

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Declared interest:

> The study is produced by OneDpe (RIANN SAS), a publisher of tools for analysing energy performance assessments. The commercial interest is declared, not concealed.

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Terminology for an English-speaking reader. The French certificate is the **DPE** (*diagnostic de performance énergétique*). Unlike the England-and-Wales EPC, it carries **two** ratings — primary energy consumption and greenhouse gas emissions — and only one of the two decides the band that is published; the rule is quoted in full further down. A *passoire thermique* ("thermal sieve") is a home in band F or G; the legal consequences attached to those two bands are stated in the section on French thresholds.

How to read this note

This document is written to be read **before** the study, including by a reader who disputes it. Where a measurement is missing, it says so. Where a choice was made, the competing choice is described alongside. Where a statement was withdrawn during the study, it appears in the log of corrections at the end.

The reference statements. Every numerical statement of the study is worded once, in this note. Every indented block below is one of those statements, in full: the value, its interval **and the type of that interval**, the threshold named unambiguously, the population size, the population and the vintage are always there, because they are part of the statement. The prose around a block explains, situates and warns; **it never rewrites the statement**.

This note carries no recommendation: the avenues the study opens are in the article that accompanies it, on the press page and in the press release.

In our texts, when a caveat does not fit, it is the result that goes, never the caveat. This note had nothing to drop: it carries them all.

What this note carries for the article, and where to find it

The article published with this study is a **comparison written for a general readership** — an owner, a landlord. It compares two checking systems, rule by rule, it explains in plain language, and **it no longer carries the statistical apparatus**. That is not a loosening: it is a **relocation**, and the destination is this note. Seven strands are **folded back onto it**, and this is where a challenger will find them — in full, with their caveats, and not in an abridged version.

WHAT THE ARTICLE DOES NOT DEVELOP	WHERE IT IS, IN THIS NOTE
the excess-mass estimation apparatus — what excess mass is, how it is estimated, against which fitted curve, with which excluded window and which interval type	"Estimation", sections "The proportion, model-free" and "The mass, with a model"
the boundary placebo for small dwellings — the most resistant result of the French strand, and the only one resting on a dated boundary move	"The three controls that make the French result hold", section "The two-sided boundary placebo"
the internal control by assessments derived from a whole-building certificate — the group where crossing the threshold carries nothing for the dwelling, with its two separate languages and the inversion that bounds it	"The three controls that make the French result hold", section "The control by assessments derived from a whole-building certificate"
the two control groups, and the asymmetry in evidential strength between them — the England-and-Wales external control, drawn from the tenure the register carries, and the French internal one, drawn from a distinction the dataset carried but nobody had used	"The asymmetry in evidential strength — a result, not an excuse"
the intervals, and above all their type — the exact interval on the proportion, the three intervals available for the mass, the one that is published and why it is the widest of the three, and what measured geographical dependence changes	"Estimation", sections "The proportion, model-free" and "The mass, with a model"
the spending cap, the exemptions register, and the second French checking channel — what an England-and-Wales landlord is required to spend, what the register records and on which exact denominator, what France has facing it, and a French channel that does not bear on the assessment	"The spending cap, the exemptions register, and the second French checking channel"
the normalisation rule of the matched comparison — the same polynomial degree, windows defined the same way on both sides, the same exclusions, the same integration constraint, and the ban on any unmatched comparison	"The France / England and Wales comparison"

⚠️ **A fold-back is not a disappearance**: this table says where each of these strands is. **No figure, no interval and no caveat of the study has been softened because the article no longer carries**

them: they are here, in full.

In one page

> The study measures one thing only, on both sides of the Channel: how assessments are distributed in the immediate vicinity of the thresholds that trigger a legal consequence. It measures neither the quality of an assessment, nor the work of a professional, nor anyone's intent.

The reading order is not left to the reader. It is fixed, and it is argued:

> The reading order is fixed: the proportion first, the mass second. The proportion is close to unassailable on method, since it rests on no model; the mass is the most exposed figure in the file — polynomial counterfactual, choice of specification, dilution of the denominator, geographical dependence. It is robust and it is arguable; the proportion is not.

The proportion first:

> In the immediate vicinity of the threshold that puts a dwelling into band F on the emissions axis, 70 kg $CO_2/m^2/yr$, 72% of assessments fall on the favourable side of the last step — the share is exactly 0.7172 on 61,181 pairs, that is 43,882 assessments below the threshold and 17,299 at it — against 51% on average at the other measurable values of the emissions scale. Assessments of existing dwellings based on an on-site visit, mainland France, excluding dwellings of 40 m² or less, vintages 2022 to 2025.

That share is not judged by eye. It is calibrated on the scale itself:

> The calibration of this share is empirical: the same statistic was computed on the 131 placebo values tested on the emissions scale — the 13 to 164 kg $CO_2/m^2/yr$ range, values more than two units away from a boundary — and none exceeds 56%, the maximum being 0.5576 and the median 0.5073; the value measured at the threshold into band F, 0.7172, is out of reach of any placebo. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France, excluding dwellings of 40 m² or less.

The mass second — and it is published with the caveat that never leaves it:

> At the threshold that separates band E from band F on the emissions axis, 70 kg $CO_2/m^2/yr$, there are 33,449 more assessments than the fitted curve predicts, that is plus 35%, in a 95% residual-bootstrap confidence interval running from plus 22% to plus 43%; the result is positive in all 948 specifications tested, with a minimum of plus 8.4% and a median of plus 34.1%. Population of 940,675 assessments within the estimation window, based on an on-site visit, mainland France, vintages 2022 to 2025.

> The measured excess is consistent with, on the one hand, an adjustment of input data in the vicinity of the threshold and, on the other, selective survival of certificates in the published dataset — deactivated, cancelled or pending-deletion assessments being outside the source by construction, and the reason for a deactivation existing nowhere. The data do not allow the two to be separated.

And what these figures are, in which direction they err, and why we did not try to shrink them:

> The published figures are floors, and six cumulative caveats all point the same way: the excluded window under-covers the bunching region, with a bias of minus 6% to minus 21%; an adjusted certificate may end up in the middle of a band, out of reach of any threshold estimator; the artefact's boundary regime attenuates at all four emissions thresholds; the French mass is diluted by the 22.71% of certificates not subject to the threshold; the upstream survival gradient is not corrected, the 2021 cohort having had five years to be deactivated where the 2026 cohort has had a few weeks; and the published interval is the widest of the three available.

	FRANCE	ENGLAND AND WALES
What is measured	two physical indicators: primary energy consumption and a quantity of emissions	one single score
Control group	**internal** — assessments derived from a whole-building certificate	**external** — the social rented sector, outside the scope of the minimum standard
Dated exogenous variation	yes, discovered mid-study	yes
Does the file say who occupies the dwelling?	**no**	**yes**

The asymmetry in evidential strength — a result, not an excuse

This is the most important point in this note, and it comes before any figure. The two strands of the study are not of equal strength. **The gap is not a defect of our work: it comes from what each of the two countries records.**

> The United Kingdom produces the indicators that make it possible to measure its own unreliability — a tenure field, an exemptions register, published audit rates, rules dated and numbered at every revision. France produces none of the equivalent indicators. This study was therefore unable to ask the two countries the same two questions: the asymmetry in what can be known is itself the result.

Both countries have a control group — that is what makes the comparison possible at all. What differs is **where** that group comes from, and therefore what it is worth.

What England and Wales permit, because they record who rents what

The England-and-Wales register carries the tenure of the dwelling, and the minimum energy efficiency requirement does not apply to the social rented sector. The register therefore supplies, free of charge, an **external** control group: two comparable stocks, under two different rules, in the same file, measured by the same instrument.

> At the British threshold of 39 SAP points, the one below which letting is prohibited in England and Wales, the excess mass is nil in the social rented sector, which falls outside the scope of the minimum energy efficiency standard: minus 1.1%, in a 95% confidence interval running from minus 7.9% to plus 6.9%, on 4,229,524 certificates; in the private rented sector it reaches plus 39.8%, in a 95% confidence interval running from plus 28.1% to plus 52.4%, on 4,395,103 certificates. The two intervals do not overlap. Register of energy performance certificates for England and Wales, excluding new builds, vintages 2012 to 2026.

The same measurement on the whole register, excluding new builds:

> On the England and Wales register excluding new builds, 20,716,467 certificates for vintages 2012 to 2026, the excess mass at the 39 SAP-point threshold is plus 13.94%, in a 95% confidence interval running from plus 9.4% to plus 18.7%.

The caveat that goes with that result, and that should not have to be raised by a critic:

> Tenure is missing on 14.5% of rows of the England and Wales register, that is 3,413,700 out of 23,552,693, and on 76.5% of 2012 rows: the 2012 breakdown by tenure is unusable.

What France permits — a control group that had not been used

The French dataset carries no equivalent of tenure. It does carry a distinction nobody had used for this purpose:

> 27.26% of French certificates, that is 4,436,634 out of 16,273,573, do not result from a visit to the dwelling: they are derived from a whole-building assessment, and for those units the value shown on the certificate is computed from the building, so that crossing a threshold carries, for the unit taken on its own, no consequence that would turn on the exact value.

This is the French counterpart of the England-and-Wales social rented sector, and it works. In mass terms, at the threshold that puts a dwelling into band E:

> At the threshold that separates band D from band E on the emissions axis, 50 kg $CO_2/m^2/yr$, the excess mass is nil on assessments derived from a whole-building certificate — minus 0.5%, in a 95% confidence interval clustered on the building running from minus 5.0% to plus 4.4%, on 743,625 assessments within the estimation window — against plus 21.4% on assessments based on an on-site visit, in a 95% residual-bootstrap confidence interval running from plus 14.0% to plus 24.8%, on 1,871,687 assessments within the estimation window; the two intervals do not overlap. Vintages 2022 to 2025, mainland France.

We never publish this family of results without the threshold at which it reverses, and we declare it ourselves, wherever we publish the others:

> At the threshold that puts a dwelling into band D on the emissions axis, 30 kg $CO_2/m^2/yr$, the contrast reverses: the share of assessments falling on the favourable side of the last step is 0.5238 on 176,926 pairs on assessments based on an on-site visit and 0.5287 on 120,871 pairs on those derived from a whole-building certificate, a gap of minus 0.0049, opposite in sign to the result; the study therefore does not publish this threshold as a control, neither in mass nor in proportion, and it declares this wherever it publishes the other thresholds. Vintages 2022 to 2025, mainland France, excluding dwellings of 40 m^2 or less.

The same control, in proportion terms, at the two thresholds where it is publishable:

> At the thresholds that govern bands E and F on the emissions axis, 50 and 70 kg $CO_2/m^2/yr$, where the threshold carries no stake, there is no bunching: on assessments derived from a whole-building certificate, for which crossing the threshold carries no consequence that would turn on the exact value, the share of assessments falling on the favourable side of the last step is 0.5270 on 37,484 pairs at the threshold into band E and 0.5558 on 8,268 pairs at the threshold into band F, against 0.6411 on 121,943 pairs and 0.7172 on 61,181 pairs on assessments based on an on-site visit. Vintages 2022 to 2025, mainland France, excluding dwellings of 40 m^2 or less.

And at the threshold that puts a dwelling into band F, the mass is **not** nil on derived assessments. It is publishable, with its margin, and the study writes out what it does not say:

> At the threshold that separates band E from band F on the emissions axis, 70 kg $CO_2/m^2/yr$, the excess mass is plus 35.3% on assessments based on an on-site visit, in a 95% residual-bootstrap confidence interval running from plus 21.6% to plus 42.1%, against plus 8.6% on assessments derived from a whole-building certificate, in a 95% confidence interval running from minus 0.8% to plus 18.3%; the two intervals are disjoint by only 3.3 points, and the study does not describe the mass on derived assessments at this threshold as nil. Vintages 2022 to 2025, mainland France.

The exact scope of that mass control — that is, the two thresholds at which it does **not** conclude:

> The control that sets assessments based on an on-site visit against assessments derived from a whole-building certificate is published in mass terms only at the thresholds governing bands E and F: at the other two emissions thresholds the intervals overlap — at the threshold into band D, from plus 3.3% to plus 7.8% for visits against minus 1.3% to plus 4.4% for derived assessments, and at the threshold into band G, from plus 3.7% to plus 12.6% against minus 25.8% to plus 13.8%. Vintages 2022 to 2025, mainland France.

> At the threshold that puts a dwelling into band G on the emissions axis, 100 kg $CO_2/m^2/yr$, the cell for assessments derived from a whole-building certificate carries only 940 pairs and its share, 0.3234, departs from 0.5 in the other direction, the mass sitting at the threshold rather than below it; on 940 observations, the study draws nothing from it. Vintages 2022 to 2025, mainland France, excluding dwellings of 40 m^2 or less.

This control group is not perfect, and saying so is part of the result:

> Assessments derived from a whole-building certificate are not a perfect counterfactual: they are flats, over-represented in communal heating, and their value derives mechanically from the building's, so that their distribution is more concentrated and an absence of bunching among them is checked against a counterfactual estimated on themselves, never against the one estimated on visits.

The relative strength of the two designs, written out in full

> The French control is internal to the register: it sets two sub-populations of the same file against each other. The British control is external: it sets two housing stocks subject to different rules against each other. Both answer the same question; the second is the stronger.

What the French dataset does not record

> The French dataset does not carry the tenure of the dwelling, no longer separates sale from letting after July 2021, no longer carries the identity of the assessor after July 2021 — that field being anonymised at source — and the reason for a certificate's deactivation exists nowhere.

> France has, for exemptions from the letting ban, no register, no filing, no administrative recipient and no counter, and no authority is charged with enforcing the energy decency of tenancies; no spending cap exempts anyone there from that ban, article 6 of Law no. 89-462 of 6 July 1989, which sets the timetable for energy decency, containing no cost exception. The threshold of 50% of the market value of the property, in force since 10 April 2022, lowers the definition of a high-performance energy renovation and makes no dwelling lettable; the cost exemption adopted by the Senate alone on 8 July 2026, sent to the National Assembly on 9 July 2026, carries no figure and has not been enacted. French law as at 19 August 2026.

> The study takes no position on the reason for a certificate's deactivation: that reason exists nowhere, and the point is not documented by the study.

⚠️ **Two statements were withdrawn from this section on 19 August 2026, and neither was rewritten silently.** One dated the opening of the England-and-Wales exemptions register from a commencement date that had been revoked before it ever took effect; the other misnamed the denominator of the registered-exemptions rate. Their replacements are quoted in full below, under "The spending cap, the exemptions register, and the second French checking channel". The log of corrections, at the end of this note, says which and why.

On the England-and-Wales exemptions register an easy formula circulates; it rests on a false premise, and the study does not use it. The exact form is this one:

> The England and Wales exemptions register does not give rise to a regular public statistic: one snapshot as at August 2023, domestic only, published in an annex to an evaluation, with no breakdown by year, plus one data point as at June 2025 in the impact assessment.

The comparison that matters lies elsewhere, and it is not about publication frequency: it is the one the French sentence quoted above establishes, and it bears on whether the counter exists at all, not on how often it is read. One cannot criticise the frequency of a counter that does not exist.

This is not a verdict on virtue, and the data forbids one

The country that produces the indicators is also the one whose audit regime has not been tightened:

> Six parameters of the England and Wales audit regime were loosened between the 2012 text and the 2025 edition in force, five of which are not individually dated: the regime has been loosened, not tightened — and this can be measured because every version of the rules is dated, numbered and published.

The second half of that sentence is inseparable from the first: it is what carries the argument.

On British law, the study never lets an announcement pass for the law that applies:

> The study presents no British announcement as law in force, and in every piece it distinguishes what is in force from what has been announced.

> In England and Wales, the spending cap opposable to the landlord that is in force is £3,500 including tax, since 1 April 2019; the increase to £10,000 was announced on 21 January 2026, with legislation targeted for 2027 and compliance by 1 October 2030, and the £30,000 penalty is conditional on primary legislation that has not been laid: neither is law in force.

The sources and their chain

French side — the master file, and its fingerprint

The chain is short and verifiable end to end: ADEME relational dump, local restore, extraction applying the six population filters, master file written to disk, single load into a table. **The study reads the file on**

disk, never a production database.

The master file's sha256 fingerprint was **recomputed over every one of its bytes**. Three independent cross-checks establish that this file is not a copy of the production table but its source bytes: the loading script reads it by name; the load log and the production reading carry the same record count; and it is the **only** revision of the table, which is proven — the weekly pruning mechanism cannot purge the revision rows concerned.

What that file contains, and what the emissions strand rests on:

> The French corpus comprises 16,273,573 certificates, issued between 2 July 2021 and 1 June 2026, in a snapshot taken on 11 June 2026; the analysis population for the emissions strand comprises 9,843,867 assessments of existing dwellings based on an on-site visit, in mainland France, vintages 2022 to 2025.

Consequences, in both directions. The six population filters were applied **once, at the same instant, to every cohort**: there is no differential downstream pruning between vintages. But the **upstream** survival gradient, the source's own, remains — it is among the cumulative caveats quoted in one page, and it is not corrected.

Seven integrity checks on the reading pass, none of which is a statement of intent: identity of the fingerprint with the manifest's; a count of **records** rather than lines; issue dates all at midnight, Paris time; boundary vectors compared with the reference module with no tolerance; rows re-run one by one in pure computation; records re-read by a **separate parser**; the compressed artefact re-checked by identical checksums.

⚠️ **A reading trap, measured.** The address field contains line breaks. Any line count, any byte-range split, any parallel processing by offsets is **wrong** on this file. That is why the published population sizes are counts of **records**.

England-and-Wales side — derived aggregates, recomputed and cross-checked by two paths

One must not write "the register" unqualified, and this note does not. What the study analyses is not the register's records: it is **aggregates derived** from that register — a table crossing year, reason for filing, tenure and score. **Every published estimate of this strand derives from it**, and none goes back to an individual record.

> The England and Wales corpus comprises 23,552,693 certificates for the 2012 to 2026 vintages, 2026 being a partial year with 895,154 certificates, roughly six months; the analysis population is the register excluding new builds, 20,716,467 certificates, the new-build exclusion covering 2,836,226 certificates, or 12.0%. Scotland and Northern Ireland are out of scope, their registers being separate.

Two independent recomputation paths, plus a control on what had already been published. First path: the producing script's functions were re-imported and the tables rebuilt from the aggregates — boundary tables and histograms **identical**. Second path: an estimator was **rewritten separately**, algebraically equivalent but coded independently, and it reproduces the published excesses to the second decimal. Publication control: the England-and-Wales numerical statements already published were reproduced one by one, **with no discrepancy in value**; **scope** divergences were, however, found and

corrected, and several of the defects identified were **conservative** — once corrected, the England-and-Wales figures go up.

What was not used, and why

- **ADEME open data predating the observation window.** It carries the assessor identifier and the

sale/letting distinction, but it was set aside: its consumption variable is computed by an earlier method, and it is **not comparable in level**.

- **The England-and-Wales exemptions register.** Searchable online, but nominative. **No collection

was made**: the UK open licence expressly excludes personal data, and the licence footer covers the help page, not the records served by the search engine.

- **Any production database**, French or British. The whole study runs on files on disk.

The first of those three exclusions costs the study its most classical test, and the consequence is declared, not worked around:

> The study presents no measurement predating the entry into force of the thresholds: the dataset contains no assessment issued before 2 July 2021, and the classic time placebo could therefore not be run.

The real population, its six filters and its withdrawal rate

The six filters, and why they are part of the subject

The study base is built by excluding six sets: the pre-reform assessment model; **deactivated** assessments; **pending deletions**; certificates predating the observation window; lapsed validities; and non-residential certificates. Some of those filters remove exactly what the study sets out to measure. This appears here at the same rank as the boundary computation, not in a footnote:

> The filters that produce the dataset remove deactivated assessments, those pending deletion and those whose validity has lapsed: that is, precisely the object of the study. The validity filter is inert, the gap between end of validity and issuance being ten years on 100% of the 16,273,573 rows, with fourteen exceptions at 3,650 days; the pruning therefore comes entirely from deactivation and pending deletion, that is, from a decision whose stated reason exists nowhere.

A corollary, and it governs how the whole stock reads:

> Three dated calculation conventions legally coexist in the same stock, because the ten-year validity has never been shortened: the gap between end of validity and date of issuance is 3,650, 3,651 or 3,652 days on 100% of the 16,273,573 rows.

The withdrawal rate, measured and dated by cohort

One cannot, in general, count what is missing from inside a file. One can for a subset: **replaced** certificates, because they are datable.

> Over the 2021-2026 window, 1,428,641 certificates were withdrawn from the dataset, that is 8.07% of the original cohort — 1,428,641 divided by 17,702,214, namely the 16,273,573 certificates surviving on 11 June 2026 plus the 1,428,641 withdrawn — and this is a lower bound: a certificate withdrawn without having been replaced does not appear in it, a certificate replaced twice is counted once, and a certificate whose replacement was itself withdrawn drops out of the count.

The rate is read against the original cohort, never against the surviving stock: the two halves of that statement do not divide into one another, and that is why the sentence carries its denominator.

The detail by cohort, all six lines, truncated vintage included:

> The withdrawal rate by cohort of the replaced certificate is 11.09% in 2021, for 100,963 withdrawn and 809,597 surviving, 8.00% in 2022 for 235,557 and 2,708,504, 8.36% in 2023 for 359,437 and 3,937,959, 7.88% in 2024 for 344,246 and 4,024,485, 8.15% in 2025 for 310,092 and 3,493,511, and 5.69% for the 2026 vintage, truncated at five months, for 78,346 and 1,299,517; taken together, over 2021 to 2026, 1,428,641 withdrawn and 16,273,573 surviving, that is 8.07% of the original cohort.

That record permits one thing and forbids another. Across the usable vintages the spread in withdrawal rate is small and **not monotone** in recency: it manufactures no trend. For it to produce the observed amplitude on its own, withdrawn certificates would have to differ from survivors by a considerable margin on a quantity whose base rate is very low. **That is not impossible; it is refutable, and only on the raw dump.**

The external control is green, and it is blind

> The monthly counts of the extract reproduce the series published by ADEME to within 0.070%: it is a conformity check, and that is all it is, since both series are post-pruning and it is blind to the deactivated rows that neither of them publishes.

This is the key point: the control is green, and it measures nothing that matters, because the data that would allow it is not published. The rate corresponding to the deactivated rows is not given in this note: its denominator is not published, and the study's rule is that no rate is published without its population size.

The two analysis populations — never to be confused

> Two different populations carry the French results: the emissions strand works on 9,843,867 assessments based on an on-site visit, in mainland France, vintages 2022 to 2025, all threshold scales included; the energy strand works on 8,380,876 certificates, on the national threshold scale only, in mainland France, based on an on-site visit, with a consistent implicit conversion factor. A population size from one never qualifies a figure from the other.

It is the easiest confusion to make when picking this file up, and the easiest to avoid: every quoted sentence carries its own population, and the sentence above states in full what one may not do with one to the other.

The French overseas départements, finally, are not described by this study; the sentence that declares it is quoted in the section "What the study does not say".

The computation convention, and the control that established it

To measure a distance to a threshold, one must know **which threshold applied**. In France that is not trivial: the scale changed, and the dataset does not say which scale was used for each certificate. The study therefore did not choose a convention — **it put them all to the test** of the only verifiable thing: the label actually published.

That control is blocking, and it is what established the convention. If our boundary does not reproduce the published label, our boundary is not the one that was applied, and the histogram of distance to the boundary is a histogram of distance to an **imaginary boundary**. It was therefore measured **before** the full pass:

> Seven boundary regimes were tested against the label actually published by ADEME, on a pre-flight sample of 811,600 rows, ahead of the full pass: the regime retained leaves 0.469% of mismatches on the energy axis and 0.318% on the emissions axis, whereas the regime that follows the order's own calendar leaves eleven times more on the energy axis and the national-boundary regime eighteen times more.

The regime retained is the small-dwelling scale, linearly interpolated between whole square metres, applied at all dates — including to certificates issued before it came into force. The choice may surprise, since it does not follow the order's timetable: it is nonetheless the only one that reproduces the dataset. **This is not a computational convenience, it is a description of what the file contains.**

Reproduced on the full pass, and published in both its forms, the raw one being the more conservative:

> On the full pass, the retained convention leaves 0.3203% of mismatches with the published label on the emissions axis, that is 52,124 out of 16,273,573 rows, and 0.3176% excluding the undefined band; on the energy axis it leaves 0.4824%, that is 33,934 out of the 7,034,546 rows on which that axis is identifiable, and 0.4786% excluding the undefined band.

Where the residual comes from, and why it does not come from our convention

A small fraction of certificates remains whose published label cannot be recovered from the figures published with it. Where does that residual come from? **The question is decidable**, and that is what makes it interesting: a switching-convention error can only show up **near** a boundary; far from a boundary it is arithmetically impossible. The residual was therefore decomposed by signed distance to the applicable boundary.

> The residual of the convention check is flat on eleven of the twelve positions around the boundary: there it stays within a range of 0.369% to 0.444%, averaging 0.4024%, that is 4,464 mismatches out of 1,109,461 rows, and it is as large six units below the boundary as five units above it, which a boundary error cannot produce. The twelfth position, one kilowatt-hour below the boundary, carries 10.075% of mismatches; it is explained by the shift in the electricity conversion factor, it runs the same way on all 8,991 mismatches in the zone one and two kilowatt-hours below the boundary, and it returns zero mismatches on the 19,774 rows of the 2026 vintage, including zero on the 10,276 lying exactly one kilowatt-hour below the boundary.

That profile — a magnitude that does not depend on distance to the boundary, apart from the single position the sentence above isolates and explains — **cannot be produced by a boundary error**. The residual therefore does not come from our convention, but from an internal inconsistency in the published data. As for the position that makes an exception, it is no escape hatch: it states a **refutable prediction** — it must return zero on the vintage of the coefficient reform, and on that one only — and the count confirms it.

The vintage that fails the control

> The 2021 vintage is excluded from the time series and from the headline figures for three independent reasons: a mismatch rate against the published label twenty-five times the normal level, 4.8797% on 809,597 rows, of which 63.2% span two bands or more; a withdrawal rate 3.0 points higher; and an implicit primary-energy conversion factor measured at 1.9 on only 49.9% of heavily electric rows, against 88 to 92% thereafter.

⚠️ The coincidence with the regulatory calendar of that autumn is striking; **it is not established here**. Attaching it to a text would require opening that text and citing it, and we have not done so.

What the retained regime costs, and in which direction

> The boundary regime of the artefact reproduces the published label, but it is wrong for measuring the incentive on the 1,124,275 dwellings of 40 m² or less issued before 1 July 2024, to which the national boundary was opposable at the time of the assessment; corrected to a date-aware regime, the share of assessments on the favourable side of the last step rises at all four emissions thresholds, from 0.5229 to 0.5247 at the threshold that puts a dwelling into band D, from 0.6320 to 0.6392 at the threshold into band E, from 0.7079 to 0.7182 at the threshold into band F and from 0.6017 to 0.6022 at the threshold into band G. The published figure is therefore a floor at all four thresholds.

The regime is declared here, and not in an appendix, because it is **the running variable**: everything else depends on it.

French thresholds, and what makes them vary

This is probably the least known fact in the file, and it governs the whole measurement. The same figure does not give the same letter everywhere.

> French thresholds are not national: the applicable boundary depends on three parameters — floor area, since from 3 to 40 m² a dedicated scale applies, row by row, linearly interpolated between whole square metres; altitude, above 800 metres; and climate zone, the altitude adjustment applying only in zones H1b, H1c and H2d. The national boundaries are 70, 110, 180, 250, 330 and 420 kWh/m²/yr on the energy axis, and 6, 11, 30, 50, 70 and 100 kg CO_2/m²/yr on the emissions axis.

And the boundaries that are modulated are not just any boundaries:

> The altitude adjustment raises only two boundaries, and they are these: the boundary that puts a dwelling into band F, the band that carries the rent freeze, moves from 330 kWh/m²/yr and 70 kg CO_2/m²/yr to 390 kWh/m²/yr and 80 kg CO_2/m²/yr; the boundary that puts a dwelling into band G, the band that carries the letting ban, moves from 420 kWh/m²/yr and 100 kg CO_2/m²/yr to 500 kWh/m²/yr and 110 kg CO_2/m²/yr. The boundaries of bands A to E do not move.

The real scope of that modulation, with the caveat on the variable that decides it:

> 98,733 certificates are issued above 800 metres and 90,703, that is 0.557% of the stock, actually have a raised boundary, because they combine high altitude with a sensitive climate zone; the variable that decides that boundary is not in the source, however, it is reconstructed from a weather-station altitude that is missing on 52.81% of rows, under the declared assumption that a missing altitude means an altitude of 800 metres or less, and the case that would be undecidable — missing climate zone together with an altitude above 800 metres — has an empty scope, zero rows out of 16,273,573.

The regulatory source is cross-checked against the *Journal officiel*. The cross-check is mechanical end to end, and it bears on the text itself:

> The threshold tables are not transcribed by hand: they are extracted mechanically from the calculation engine and diffed against the text published in the Journal officiel — order of 25 March 2024, identifier JORFTEXT000049446315, NOR TREL2330369A, Journal officiel no. 0093 of 20 April 2024, in force on 1 July 2024 — with 1,064 comparisons and zero discrepancies. There are two genuinely independent sources: the calculation-engine chain, and the published text.

And one cell remains where the text itself says nothing. We do not fill it in; we declare it:

> On a grid of 1,209,600 test cases, 70,144 divergences remain between the calculation engine and a direct reading of the schedule, all concentrated in a single cell — floor area of 40 m² or less together with an altitude above 800 metres — where the text is silent; 24,095 certificates combine both conditions, that is 0.148% of the stock, and no figure in the study depends on them.

Estimation

The proportion, model-free

At a threshold, one counts the certificates in the last step below and the first step above, and publishes the share of the former. No polynomial, no bandwidth, no counterfactual: two integer counts and a division. It is the only valid estimator on a discrete value, and its calibration is **empirical** — the same statistic is computed on the placebo values of the scale, and the threshold is positioned within that distribution. The headline result and its calibration are quoted in one page.

The same statistic, without the small-dwelling exclusion, and with its exact interval:

> Measured with the boundary applicable to each individual row and across all floor areas, the share of assessments on the favourable side of the last step at the threshold into band F is 0.7079, in an exact Clopper-Pearson binomial interval running from 0.7045 to 0.7113, on 67,894 pairs. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

And under a date-aware boundary regime, the one that answers the incentive objection:

> Measured under a date-aware boundary regime, that is with the boundary that was opposable at the time of the assessment, the share of assessments on the favourable side of the last step at the threshold into band F is 0.7182 on 70,203 pairs, against 0.7079 on 67,894 pairs under the artefact regime: the published figure is a floor. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

The full ranking, which replaces an earlier, over-broad statement:

> Over the genuinely measurable range of the emissions scale — 1 to 162 kg $CO_2/m^2/yr$, that is 162 eligible values — the top two values are the threshold into band F, with a share of 0.7172 on 61,181 pairs, and the threshold into band E, with 0.6411 on 121,943 pairs; third comes the boundary between bands B and C, with 0.6405 on 430,294 pairs, which carries no direct regulatory stake, fourth comes a value that is not a boundary at all, and the threshold into band G ranks only fifth, with 0.6076 on 12,965 pairs. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France, excluding dwellings of 40 m² or less, with at least 400 observations in each of the two steps.

> The boundary between bands B and C carries a step of its own, of the same order as those of bands D and E; it lies in the most compressed part of the scale, where the estimation method no longer applies, and we put forward no mass estimate for it.

> On assessments derived from a whole-building certificate, the share on the favourable side of the last step at the boundary between bands B and C is 0.4895 on 171,926 pairs, against 0.6405 on 430,294 pairs on assessments based on an on-site visit: a declining density would decline among derived assessments too. Vintages 2022 to 2025, mainland France, excluding dwellings of 40 m² or less.

> The study puts forward no mass estimate at the two low thresholds of the emissions axis, 6 and 11 kg $CO_2/m^2/yr$: band B is only five units wide, the maximum half-window free of a neighbouring boundary is three bins, and the method does not apply there. This is not a failure, it is a fact about the instrument: at low emissions, the French scale is too fine for the method to apply.

The mass, with a model

A polynomial is fitted to the observed density in a window around the threshold, excluding the steps where accumulation occurs, each receiving its own dummy. The gap between the observed and that counterfactual is the excess mass. The headline result is quoted in one page; what follows describes what surrounds it.

> Three intervals were available for the mass at the threshold into band F, and the widest is published as a matter of course: the standard error is 0.52 point for an observation bootstrap, 1.04 point for a bootstrap clustered on postcode, and 5.24 points for the residual bootstrap, which is the one the published interval, plus 22% to plus 43%, rests on.

> Geographical dependence has been measured on the only key available in the artefact — 400 replications, 5,997 postcodes, 157 assessments per cluster within the window: moving from an observation bootstrap to a bootstrap clustered on postcode multiplies the standard error of the mass by 2.0 and that of the proportion by 1.5. Even clustered on geography, the standard error remains five times smaller than the residual bootstrap's, 1.04 point against 5.24 points: the published interval absorbs the measured geographical dependence with a very wide margin. Postcode is, however, one possible cluster, not the only one; building, estate and co-ownership are not observable on assessments based on an on-site visit.

The aggregate of the four thresholds, published as an order of magnitude and without an interval, with the reason for that choice:

> The four thresholds of the emissions axis together account for 93,113 assessments over vintages 2022 to 2025, that is 0.946% of a population of 9,843,867 assessments based on an on-site visit in mainland France, and 104,664 assessments over the full 2021-2026 window, that is 0.904% of a population of 11,571,524; the study publishes this aggregate as an order of magnitude and attaches no confidence interval to it, the four estimation windows overlapping and the interval composed in quadrature being, for that reason, too narrow.

> The emissions-axis aggregate and the energy-axis aggregate do not add up: the published label is the worse of the two bands, one certificate can be counted on both sides, and any sum is double-counting.

And where the counterfactual breaks down, the study publishes no mass at all:

> The study publishes no excess-mass figure for the group where crossing the threshold does not change the label: the polynomial counterfactual breaks down there, the density rising across the boundary at the threshold into band D, where the residual interval for that cell runs from minus 7.7% to plus 416.0%. The model-free statistic suffices and needs no counterfactual.

The round-number objection

The French thresholds are, for the most part, multiples of ten. The objection is legitimate and it is closed by measurements, not by an argument.

First, the direction of the effect runs **against** the result:

> The direction of the round-number effect runs against the result, since the threshold is the first point of the worse band: at the boundary between bands E and F, the bunching is on sixty-nine and the trough on seventy, the density relative to neighbours being 1.705 at 69 and 0.692 at 70. Assessments based on an on-site visit, mainland France, excluding dwellings of 40 m² or less.

Second, its weight is measured:

> At multiples of ten that are not thresholds, the share of assessments on the favourable side of the last step is 0.5080 across eleven values, against 0.5086 at the one hundred and twenty values that are not multiples of ten: the round-number effect weighs less than one thousandth — the gap is minus 0.0006 — where the gap at the threshold into band F weighs two hundred and nine, at plus 0.2086. Range 13 to 164 kg CO_2/m²/yr, values more than two units from a boundary, vintages 2022 to 2025, assessments based on an on-site visit, mainland France, excluding dwellings of 40 m² or less.

The excess at round numbers does exist, however, and saying nothing about it would have been a fault:

> There is indeed an excess of observations at multiples of ten on the emissions axis, of plus 1.07% with a standard deviation of 0.50 across ten bins, and the emissions value is published as a whole number on 73.61% of rows; but that excess is not specific to multiples of ten, since multiples of five that are not multiples of ten carry more of it, plus 1.38% with a standard deviation of 0.36 across six bins.

Finally, what removing that control would cost:

> Neutralising round numbers in the estimation moves the result by less than three per cent in relative terms on the emissions axis — minus 0.7% at the threshold into band E, plus 0.5% at the threshold into band F, plus 0.3% at the threshold into band G and plus 2.9% at the threshold into band D — and by at most 0.14 point on the energy axis: the control is kept in the reference specification, and its harmlessness is a result, not an assumption.

The conclusive proof is not in this paragraph: it is the boundary placebo, below, and it is the sentence quoted there that carries it.

The persistence coefficient

> At the threshold that puts a dwelling into band D on the emissions axis, 30 kg $CO_2/m^2/yr$, the distribution does not move: the share of the zone where no one would have an interest in being that has remained there is indistinguishable from 1, in a 95% residual-bootstrap confidence interval running from 0.961 to 1.008; at the threshold into band F, 70 kg $CO_2/m^2/yr$, the band that carries the rent freeze, it is 0.7204, in a 95% residual-bootstrap confidence interval running from 0.570 to 0.740, meaning that even where the stake is highest, close to three assessments in four located in that zone have stayed there and have not crossed the threshold. Population of 9,843,867 assessments based on an on-site visit, mainland France, vintages 2022 to 2025, three-unit zone.

That coefficient bears on where a certificate sits in a distribution of declared values, never on works actually carried out; the corresponding restraint sentence is quoted in the section "What the study does not say".

The three controls that make the French result hold

The control by assessments derived from a whole-building certificate

It is quoted in full above, with its scope, its counterfactual caveat and the threshold at which the contrast reverses. It is the only one of the three that depends on no conditioning variable.

The control by the inoperative label

> The published label is the worse of the two bands, so that when the energy band is already the worse one, crossing the emissions threshold changes nothing about the label, nothing about the rent freeze and nothing about the letting ban: at the threshold into band F, 70 kg $CO_2/m^2/yr$, the share of assessments on the favourable side of the last step is 0.7531 on 57,664 pairs in the group where crossing matters, and 0.4530 on 10,230 pairs in the group where it does not. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

> The gap between the two groups is thirty points at the threshold into band F, 70 kg $CO_2/m^2/yr$, seventeen points at the threshold into band E, 50 kg $CO_2/m^2/yr$, on 111,617 and 22,944 pairs, and thirteen points at the threshold into band G, 100 kg $CO_2/m^2/yr$, on 8,455 and 6,279 pairs; the study does not publish this control at the threshold into band D, where it shows nothing. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

What makes this control defensible is not the gap itself, it is the internal benchmark — and the eligibility rule that makes it interpretable, which is part of the statement:

> At the threshold into band F, 70 kg $CO_2/m^2/yr$, in the group where crossing matters, the share of assessments on the favourable side of the last step, 0.7531 on 57,664 pairs, exceeds that of every one of the seventy-nine placebo values measured within that same group, the highest of which reaches 0.7216; those placebo values are the values in the 13 to 164 kg $CO_2/m^2/yr$ range lying more than two units from a boundary and carrying at least one hundred observations in each of the two steps, and it is that hundred-observation rule that makes the maximum interpretable. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

Two caveats go with this control, and we write them ourselves, before a critic does:

> This split rests on the band of the other axis, which is not itself beyond adjustment; that is why it is presented alongside the control based on assessments derived from a whole-building certificate, which does not depend on it.

> In the group where crossing the threshold does not change the label, the share is not merely lower than in the other group: it is low relative to the placebo values of that group itself. We therefore do not present this group as neutral. What the control establishes is a gap between the two groups, not the inertness of either of them.

Where exactly that group sits within its own distribution, threshold by threshold:

> In the group where crossing the threshold does not change the label, the measured share sits at the first percentile of its own placebo values at the threshold into band F, at the eleventh at the threshold into band E and at the third at the threshold into band D; at the threshold into band G it is an exception, at the eighty-sixth percentile. Vintages 2022 to 2025, assessments based on an on-site visit, mainland France.

And what this control does not establish, in plain words:

> The study does not claim that the control based on the group where the threshold is inoperative rules out every explanation by measurement or by density: that would be too strong, and this control rests on a conditioning variable that is not itself beyond adjustment.

The two-sided boundary placebo — the most robust result of the French strand

A dated exogenous variation does exist on the French side: on a known date, a dedicated scale for small dwellings came into force. The boundaries moved for one group and not for the other.

> On dwellings of 40 m² or less, at the emissions threshold separating band E from band F, the share of assessments on the favourable side of the last step measured against their own boundary goes from 0.4986, in an exact binomial interval of 0.482 to 0.515 on 3,476 pairs before 1 July 2024, to 0.7406, from 0.725 to 0.756 on 3,207 pairs after; measured against the national boundary of 70 kg CO_2/m²/yr, it does exactly the reverse, from 0.7075, 0.696 to 0.719 on 5,785 pairs before, to 0.4683, 0.453 to 0.484 on 3,942 pairs after. Exact Clopper-Pearson binomial intervals, no model; assessments based on an on-site visit, mainland France, vintages 2022 to 2025.

> Dwellings of more than 40 m², whose boundary does not change on 1 July 2024, do not move: measured against the boundary applicable to them, the share of assessments on the favourable side of the last step at the emissions threshold between bands E and F goes from 0.7265, in an exact binomial interval of 0.722 to 0.731 on 41,617 pairs before that date, to 0.7002, from 0.694 to 0.707 on 19,594 pairs after. Exact Clopper-Pearson binomial intervals; assessments based on an on-site visit, mainland France, vintages 2022 to 2025.

Neither group is presented here as inert: what this test establishes is a **gap** between them, measured on both sides of the same date.

And it is that shift which closes the round-number objection — by measurement, not by argument:

> Of the 1,779,456 assessments of dwellings of 40 m² or less in vintages 2022 to 2025, only 20,123 keep the round boundary of 70 kg CO_2/m²/yr, that of dwellings of exactly 40 m², leaving 98.87% of boundaries that are not multiples of ten — and the bunching follows them. Mainland France, assessments based on an on-site visit.

> The bunching follows the threshold when the threshold moves: this is a property of the distribution, the point of accumulation following the boundary in force, and not evidence that any professional adjusted anything.

> This test is a two-sided placebo by design, inside the observation window, and not the two-sided placebo in the sense of the literature: the dataset contains no assessment earlier than 2 July 2021 and the earlier open data was set aside, so the classic time placebo — measuring the absence of bunching before the thresholds came into force — could not be run. It is, on the other hand, stronger against the round-number objection, because the boundaries it moves to are not round numbers.

The energy axis

This axis is handled separately, and it does not appear on the press page. The restraint sentence that says why is quoted under "What the study does not say".

> On the energy-consumption axis, measured on a scale reconstituted to be opposable to the emissions one, the excess is 13.66% at the 250 kWh/m²/yr threshold, in a 95% residual-bootstrap confidence interval running from 9.48% to 16.70%, 19.31% at the 330 kWh/m²/yr threshold, from 13.50% to 24.83%, and 13.01% at the 420 kWh/m²/yr threshold, from 8.68% to 16.12%, over a window of ten kilowatt-hours per square metre per year; these figures rest on a reconstruction of the scale, the fact is measured but the mechanism is not, and the study publishes no window population size for these three measures. Vintages 2022 to 2025, national threshold scale only, mainland France, assessments based on an on-site visit, consistent implicit conversion factor.

The same axis on the vintage where no reconstruction is needed:

> On the 2026 vintage, where the published value is the opposable value and no reconstruction of the scale is needed, the excess is 11.78% at the 250 kWh/m²/yr threshold, in a 95% residual-bootstrap confidence interval running from 7.33% to 14.97%, 10.09% at the 330 kWh/m²/yr threshold, from 6.42% to 12.46%, and 9.46% at the 420 kWh/m²/yr threshold, from 5.64% to 12.87%, over a window of ten kilowatt-hours per square metre per year and on 745,383 assessments; that vintage is truncated at 1 June 2026, that is five months, and it constitutes a break in series, the reform of the electricity conversion factor having shifted the whole electric population.

And a check that owes nothing to a model — it is the sentence that follows that carries it, and it reads from end to end:

> On dwellings with little electricity, whose electric share is 0.4 or less and for which the change of conversion factor shifts the value by only two kilowatt-hours, the density cliff sits between 417 and 418 kWh/m²/yr over vintages 2022 to 2025, that is two units below the 420 threshold, a drop of 27.8%, on 4,048,700 assessments; on the 2026 vintage it sits exactly between 419 and 420, a drop of 53.6%, on 387,557 assessments — that is, the vintage in which the electricity conversion factor changes and the published value becomes the opposable value again. The same notch, displaced by the predicted amount, back in place on the predicted date, with no polynomial, no window and no reconstruction. Assessments based on an on-site visit, mainland France, primary energy as published.

> The emissions axis is not affected by the reform of the electricity conversion factor: the density step at the threshold into band E, 50 kg CO_2/m²/yr, is present in all six vintages, 2026 included, and its amplitude grows — the ratio of the count at the threshold to the count in the last step below is 0.751 in 2021, 0.664 in 2022, 0.639 in 2023, 0.564 in 2024, 0.400 in 2025 and 0.524 in 2026 — and in each of the 2022 to 2026 vintages that value sits at percentile 0 of the distribution of the 113 non-regulatory placebo values of the same vintage. Assessments based on an on-site visit, mainland France, standard boundaries.

What the file contains, on this axis — and these statements are to be read as descriptions of the file, never as mechanisms:

> 424,890 dwellings of 40 m² or less issued before the reform, that is 26.55% of 1,600,325, would carry a different band depending on which calculation convention is applied, and all thirteen observed transitions run in the favourable direction.

> 2,600,173 certificates out of 12,986,146, that is 20.02%, carry a published band different from the band that was opposable on emissions; 376,883 of them, that is 2.90%, move out of bands F or G, including 178,615 out of band G, and none moves into them — the share of bands F and G being 12.33% on the opposable scale and 9.43% as published. This statement describes what the file contains, not a mechanism.

> The emissions value is published as a whole number on 73.61% of rows, and the energy value on 6.53%, of which 98% belong to the 2026 vintage.

The France / England-and-Wales comparison

The two countries do not measure the same thing on the same scale. One step does not cover the same quantity on either side of the Channel, and the England-and-Wales scale has neither the same direction nor the same shape as the French ones. The rule that follows has no exception:

> One never compares a per-bin ratio of counts between the two countries: a bin is one SAP point on one side and one kilogram of CO_2 or one kilowatt-hour on the other, a factor of five in what the same window covers. The only two admissible comparisons are mass related to band width, and estimates recomputed with windows defined as equal fractions of band width, integration constraint included.

Applied, it gives this, with the two caveats that go with it:

> Related to the width of the band it concerns, and on a matched design — same polynomial degree, same half-window expressed as a fraction of band width, same excluded window expressed as a fraction, same integration constraint — the excess measured at the French threshold into band F, 70 kg $CO_2/m^2/yr$, is two to two and a half times the one measured at the England and Wales threshold of 39 SAP points, the one below which letting is prohibited: the six matched pairs give ratios of 2.05, 2.09, 2.25, 2.32, 2.55 and 2.55, with a median of 2.29, and at the only strict match — a 25% excluded window on both sides — the ratio is 2.55 whatever the integration constraint.

> The England and Wales score is a single composite score, whereas France has two and the label there is the worse of the two bands: 213,598 of the 940,675 certificates in the French estimation window, that is 22.71%, fall in the group where crossing the threshold does not change the label, so that the French mass is diluted, and therefore conservative — but the two objects are not of the same nature.

> The French control is internal to the register: it sets two sub-populations of the same file against each other. The British control is external: it sets two housing stocks subject to different rules against each other. Both answer the same question; the second is the stronger.

> The study compares no French figure with any British figure without a matched design: unmatched, the two strands are not comparable as they stand.

The two checking systems, rule by rule — what each one requires

The previous section compares two **measurements**, and it only does so at the price of an explicit matching. This one compares two **rules**: what each country requires of whoever produces a certificate, and what it requires of the dwelling itself. The quantity compared is **what the rule requires**, and nothing else.

⛔ **The fatal error of this section, named before any figure.** The French checking operation bears on an **assessor**; the England-and-Wales audit bears on a **certificate**. The two do not divide by one another, do not go into the same numerical comparison, and form no ratio. A wobbly comparison destroys a study more surely than a missing one, and a challenger always starts there.

⚠️ **This section does not reverse the study's thesis, it completes it.** The thesis remains: France asks more of its homes and knows less about its assessments. "Knows less" never slides into "does worse", and "asks more" never into "does better".

What England and Wales require, and France does not

The simplest question one can put to a checking system is this: from what point is a certificate deemed wrong? On one side of the Channel, the answer is a number, it is written down, and it commands a consequence.

> In England and Wales, the audit of a dwelling certificate fails if the sum of the absolute errors recorded field by field exceeds five SAP points, the rounding being such that an error between 4.5 and 5.4 counts as five points and therefore as a pass; the certificate is then marked as defective, the Not for Issue marker is applied on the register, the assessor must replace it before any cancellation, and the cost of the replacement must not fall to the property owner. The rule is that of the domestic energy assessor strand covering existing dwellings, and it is unchanged since the version of the Scheme Operating Requirements approved on 19 July 2019.

On the other, the same question has no published answer. The only available figure is retrospective, and its denominator is **inside** the sentence.

> In France, the Cour des comptes writes, in its report of 3 June 2025, that failings recorded following the 2023 surveillance operations stood at 18% — a percentage of surveillance operations, not of assessments — and that those failures for the most part led to additional checks, without giving rise to sanctions. No definition of a failing and no numerical tolerance is published; the sanction, when it comes, bears on the certified individual, by suspension and then withdrawal of certification, and no text requires the withdrawal or the replacement of the assessment found to be defective.

⛔ **The two statements above do not compare term for term, and this note puts them in no shared table.** The first is a decision rule, the second a retrospective count on a population of checking operations. What compares is the **existence** of a published failure threshold on one side and its **absence** on the other.

And the restraint that bounds the second:

> The study produces no statistic by practitioner, by firm, by software or by accreditation body, on either side of the Channel: on the French side, the data that would make it possible does not exist after July 2021; on the England and Wales side, it exists and the study declines to produce it.

Who enforces the letting threshold, on the England-and-Wales side. The minimum performance level required of a let dwelling is enforced there by the local authority, and it is a duty: "An enforcement authority must enforce compliance with the requirements of this Part in relation to properties in its area", the authority being, for a dwelling, "a local authority" (Energy Efficiency (Private Rented Property) (England and Wales) Regulations 2015, regulation 34).

What France requires, and England and Wales do not

The first gap is about access to the property. It is the hardest to obtain, and it is the only one in the file where the French rule bears on the property itself.

> A French assessor's certification cycle lasts seven years and comprises six surveillance operations, three of them on site: one during the production of an assessment in the first year, two after production, in the third and fifth years; in 2023, 937 on-site checks were carried out, out of 3,819 surveillance operations. In England and Wales, no audit selection rule for the domestic energy assessor strand covering existing dwellings requires a visit: every line of the selection table calls for a check of the evidence supplied by the assessor, which must be of sufficient clarity for the auditor to replicate the certificate. The Cour des comptes itself writes, in its report of 3 June 2025, that checking after production requires the assessor's former clients to agree that an examiner may come back to their home.

⚠️ The caveat is **inside** the sentence, and it is not decorative: an obligation whose implementation requires the agreement of former clients depends on third parties. It is a practical limit, not a legal one — the rule itself exists on one side and not on the other. ⛔ And it does not say that visits do not exist on the other side: the accompanied visit is described there as an audit method; what is established is that no selection rule triggers it.

The second gap is recent, and it is about how a detected anomaly travels.

> Since 1 October 2025, statistical analysis of the activity of French assessors, drawn from the automated data processing provided for by the construction and housing code, triggers the automatic reporting of anomalies by the French agency for ecological transition to the certification bodies, which must carry out the appropriate checks within one month; this is imposed by the order of 16 June 2025 amending the order of 20 July 2023. In England and Wales, the list of detection rules is national and single — twenty active out of thirty-four numbered, in the version applicable since 1 July 2025 — but the multiple-lodgement rules look only at certificates lodged within the same accreditation scheme, and the text itself states that it is not yet a requirement to share information about members' activities between schemes.

The contrast is not about how fine the detection rules are — they are national and single on the other side of the Channel — but about what the rule leaves outside its field when several bodies share a market without having to pass on what they see; and it is the text itself that says so.

A third French rule, from the same month, closes another door. ⚠️ Its final clause is the heart of the sentence, not its politeness: a negative search over a named corpus is not a finding of non-existence.

> Since 1 October 2025, validated French software displays the energy label and the climate label only once the energy performance assessment has been transmitted to the French agency for ecological transition, under article 7 of the order of 16 June 2025 amending the orders of 31 March 2021. No equivalent was found in the England and Wales Scheme Operating Requirements of the 2025 edition: this is a negative search over a named corpus, and not a finding that none exists.

The last gap is no longer about checking: it is about the level required of the dwelling itself, and it is the first half of this study's thesis.

> In mainland France, the minimum performance level required of a dwelling let as a main residence rises four times in eleven years: consumption below 450 kilowatt-hours of final energy per square metre per year on 1 January 2023, band F on 1 January 2025, band E on 1 January 2028, band D on 1 January 2034, under decree no. 2021-19 of 11 January 2021 and then decree no. 2023-796 of 18 August 2023. In England and Wales, the opposable minimum is band E; it has applied to new tenancies since 1 April 2018 and to all continuing tenancies since 1 April 2020, and it has not been raised since: the increase announced on 21 January 2026, with legislation targeted for 2027 and compliance by 1 October 2030, is not law in force.

⚠️ **That sentence calls for the next one.** Read alone, it would suggest that "nothing moved on the other side of the Channel", and that is false: what moved there is the spending cap opposable to the landlord, which the next sentence dates — while saying, in the same breath, what is **not** law in force.

> In England and Wales, the spending cap opposable to the landlord that is in force is £3,500 including tax, since 1 April 2019; the increase to £10,000 was announced on 21 January 2026, with legislation targeted for 2027 and compliance by 1 October 2030, and the £30,000 penalty is conditional on primary legislation that has not been laid: neither is law in force.

What none of these rules says

> These rules state what each system requires, never what it produces: the rate of failed audits is not published in England and Wales, no public account of the automatic reports exists in France, and the study does not say of either system that it works. Nor do they convert into comparable rates: the French surveillance operation bears on an assessor, the England and Wales audit on a certificate.

That sentence applies to each of the six above, and it is what stops this section from becoming a league table: it names the two absences, on both sides, and it names the reason the two systems do not divide by one another.

The spending cap, the exemptions register, and the second French checking channel

This strand was established on 19 August 2026, on primary texts reopened for the purpose, and it therefore postdates the freeze date that dates the statistical values in this note. Each sentence quoted below

carries in itself the date at which its law or its count is fixed.

It covers four objects that never merge: what an England-and-Wales landlord is required to spend, the register on which exemptions are entered, what France has — and does not have — facing it, and a second French checking channel that does not bear on the assessment.

⚠️ **Three of these sentences correct a statement that had already been published.** The original statements were withdrawn, not silently rewritten; the log of corrections at the end of this note says which and why.

What an England-and-Wales landlord is required to spend

> A landlord in England or Wales is not required to spend more than £3,500 including value added tax per dwelling to reach the minimum standard, and that cap is law in force since 1 April 2019. It is not an exemption: beyond it, a measure ceases to be a relevant energy efficiency improvement, and it is that requalification which opens the exemption. It is counted net of unregistered spending, so that expenditure not entered on the register can no longer be set against it. England and Wales, domestic private rented property, law in force as at 19 August 2026.

⚠️ **The cap is not an exemption, and the sentence says so itself**: it names the requalification through which the exemption opens, and it is that mechanism that operates, not a dispensation. ⚠️ **This cap is not comparable with a checking rate**: an amount and a share of files verified are not of the same nature.

What has been announced is not what applies, and the study never lets one pass for the other:

> The study presents no British announcement as law in force, and in every piece it distinguishes what is in force from what has been announced.

> The increase of the England and Wales spending cap to £10,000 was announced on 21 January 2026 and is not law in force: the Government is seeking an Act and then implementing legislation coming into force in 2027, for compliance required by 1 October 2030, with a ten-year exemption once the cap has been spent and an affordability ground set at the lower of £10,000 or 10% of the value of the dwelling. All of this is announced; the cap opposable as at 19 August 2026 remains £3,500.

⚠️ **The announcement clause is inside the sentence, not around it**, and deliberately so. The lower term it names is not comparable with any French threshold: they bear neither on the same object nor on the same decision.

The register, and what it actually records

> An exemption from the letting ban is entered on the England and Wales exemptions register, open for dwellings since 1 October 2017 and searchable online since 5 May 2026; it takes effect only from the point of registration, it lasts five years, and the landlord must then try again to improve the dwelling before registering another. It falls away on sale, the buyer of a let property having six months to comply or to register one of their own. That it falls away on sale is stated by the statutory guidance and not by an article of the regulations.

⚠️ **What becomes of an exemption when the property is sold does not come from the regulations themselves, but from the guidance.** The sentence carries that distinction in its final clause.

> As at August 2023, the England and Wales exemptions register held 16,257 registered exemptions, of which 13,486 current, that is 0.34% of the 4,021,488 private rented dwellings with a certificate recorded in the national database at that date — a database which the source itself states does not cover the whole stock. A second data point, as at June 2025, covers 20,200 properties. The two points are neither the same quantity nor the same date: the first counts exemptions, the second properties, and they do not subtract.

⛔ **The denominator of that rate is not the whole rented stock, and the sentence names it exactly.** It also carries, in the source's own terms, the coverage caveat that goes with it: the database that denominator comes from does not record everything. That is precisely what the withdrawn statement misnamed. ⛔ The two data points the sentence carries are not the same quantity, are not at the same date, and do not subtract.

What France has facing it

> France has, for exemptions from the letting ban, no register, no filing, no administrative recipient and no counter, and no authority is charged with enforcing the energy decency of tenancies; no spending cap exempts anyone there from that ban, article 6 of Law no. 89-462 of 6 July 1989, which sets the timetable for energy decency, containing no cost exception. The threshold of 50% of the market value of the property, in force since 10 April 2022, lowers the definition of a high-performance energy renovation and makes no dwelling lettable; the cost exemption adopted by the Senate alone on 8 July 2026, sent to the National Assembly on 9 July 2026, carries no figure and has not been enacted. French law as at 19 August 2026.

⛔ **The French threshold this sentence names has never borne on decency**: it lowers a definition of renovation, and it makes no dwelling lettable. ⚠️ It is not comparable with the lower term of the announced England-and-Wales text: the two shares bear neither on the same object nor on the same decision. ⚠️ And this sentence does not say that France has nothing: two relief valves exist, they do not suspend the ban, none of them bears on cost, and none is quoted here for want of having been re-verified.

The second French checking channel, and the object it does not check

> France has a second channel for controlling the sector: the Cour des comptes states, in its report of 3 June 2025, that 457 property diagnostic establishments were checked in 2023 by the directorate general for competition, consumer affairs and fraud control, in a sector that counted 6,795 of them, that is 7% of businesses checked, and that close to 70% were in breach. That channel does not bear on the assessment itself: the Cour states that this directorate is not competent to verify the quality of the assessments produced, and that the great majority of the breaches recorded are breaches of consumer law. The establishments checked are targeted on past records or complaints, and the count of the sector is that of a private observatory cited by the Cour.

⚠️ **The share of establishments in breach says nothing about the reliability of assessments**: it is comparable neither with an assessment error rate nor with the share of assessments checked: neither

counts the same object as it does. ⚠️ This channel also contradicts the idea that "France does not check the sector": it is our own headline source that documents it.

Two restraint sentences go with the one above:

> The study produces no statistic by practitioner, by firm, by software or by accreditation body, on either side of the Channel: on the French side, the data that would make it possible does not exist after July 2021; on the England and Wales side, it exists and the study declines to produce it.

> The comparison between the checking rate on works and the checking rate on the assessment does not say that the checks on energy saving certificates are well done, nor that those on the assessment are badly done: it sets two regulatory floors applied to the same site against each other, one bearing on works operations, the other on assessors. It is a comparison of instrumentation, not of probity.

The policy and social strand — the checking, its cost, who pays, who owns

This strand was established on 18 August 2026, that is after the freeze date that dates the other values in this note; every sentence quoted below therefore carries in itself the date of its own count and the vintage of its source. It adds no measurement to the statistical strand: it describes the machinery around the document — what is checked, what checking would cost, who pays for retrofit, and who owns the dwellings concerned.

Four kinds of spending coexist here, and they never mix: State budget appropriations, which the taxpayer meets through the voted budget; tax expenditure, which they meet through revenue forgone; a private obligation passed on in energy bills, which the energy consumer meets on their bill and which sits outside the State budget; and direct household spending, which is counted nowhere. **That is why every numerical sentence of this strand carries its kind within itself**: an amount given without its kind is misleading, and the aggregate is worded "collectively mobilised".

What France checks, what England and Wales audit

Two systems, and above all two objects. The first monitors certified individuals over a multi-year cycle; the second draws files lodged over a single year. That difference of object governs the reading of everything that follows, and it is what forbids turning it into a ranking of seriousness.

Primary sources. For the published rate, the report of the French financial jurisdiction that the sentence names and dates. For the recounted rate, a count we made ourselves on the ADEME open file, whose date the sentence carries. The two denominators are given side by side because they differ, and the gap is written rather than resolved.

> In 2023, fewer than one dwelling energy performance assessment in a thousand was checked in France. The Cour des comptes states, in its report of 3 June 2025, that checked assessments accounted for 0.08% of the annual volume; the same numerator — 3,819 operations, that is 2,882 documentary surveillance operations and 937 on-site checks — divided by the 3,936,117 dwelling assessments published as open data for 2023, counted on 15 August 2026, gives 0.097%. Neither converts into one assessment in N: the Cour's denominator is not published, it is implicit, and this count contradicts it by 21%.

⚠️ **The sentence writes a gap, not a verdict.** The jurisdiction's denominator remains implicit for want of being published: a scope wider than dwellings alone, or documents later replaced and then removed from the open data, would be enough to account for that gap — and neither of those two hypotheses is verifiable from the published sources.

> As the Cour des comptes describes it in its report of 3 June 2025, the French State checks no energy performance assessment itself: through Cofrac it accredits thirteen private certification bodies, which certify individuals for seven years, with six surveillance operations over that seven-year cycle — one check during an assessment in the first year, three documentary checks and two checks after an assessment has been produced. What the system monitors is the assessor; the assessment is monitored only through them.

⚠️ Naming the number of accredited bodies **describes an architecture**; it produces no statistic per body, and the rule that forbids that holds here without exception, as it does everywhere else in this study.

The contrast that follows borrows nothing from abroad: it sets France against itself, on the same site and in the same dwelling.

> On the same works and in the same dwellings, the French State requires applicants for energy saving certificates to reach a minimum rate of satisfactory on-site checks of 10% in 2023, 12.5% in 2024 and 15% in 2025, as published in the annual report of the French directorate-general for energy and climate; on the energy performance assessment that triggers those works and sets the amount of the subsidy, fewer than one in a thousand was checked in 2023.

What it does not say is stated immediately after it:

> The comparison between the checking rate on works and the checking rate on the assessment does not say that the checks on energy saving certificates are well done, nor that those on the assessment are badly done: it sets two regulatory floors applied to the same site against each other, one bearing on works operations, the other on assessors. It is a comparison of instrumentation, not of probity.

> Measured against the 2023 rate of checked assessments, the floor for on-site checks imposed on energy saving certificates is of the order of one hundred to one hundred and ninety times higher: the ratio is 103 in the most conservative combination, the 10% floor for 2023 against the recounted rate of 0.097%, and 188 in the widest, the 15% floor for 2025 against the 0.08% rate published by the Cour des comptes; and that floor rises to 100% for the coup de pouce rénovation globale whole-house retrofit scheme and for the insulation of heating networks. The comparison sets two regulatory floors applied to the same site against each other, one bearing on works operations, the other on assessors.

⚠️ **This ratio is not a ratio of resources committed.** It sets two regulatory floors side by side whose objects differ: building sites on one hand, certified individuals on the other. It is published as a range because the two available rates share neither source nor year, and the sentence names the two combinations that bound it.

On the England-and-Wales side, **the nature of the text carrying the floor has to be read**: these are not legislative provisions, but a set of conditions bound to the approval given to accreditation schemes, and the sentence gives their edition and the date of that approval. It says so, and that is why it says so.

> In England and Wales, every accreditation scheme must audit at least 2% of certificates lodged over twelve months, at least 0.5% of each member's lodgements over the calendar year, and at least one file per assessor every twelve months; this is a floor and not a ceiling, audits triggered by a complaint, by a new member joining, by a re-lodgement after failure or by an abnormal lodgement volume being counted on top. These rules are the conditions attached to the approval of accreditation schemes, in the 2025 edition of the Scheme Operating Requirements approved on 20 June 2025: they are not legislation.

> Measured against the roughly 1,756,000 dwelling certificates lodged in England and Wales over the twelve months to September 2025 — 1,666,000 in England and 90,000 in Wales, according to the official statistics published on 30 October 2025 —, the 2% audit floor amounts to some 35,000 audits a year.

⚠️ "Some" belongs to the sentence: the lodgement total from which that volume derives is itself published to the nearest thousand.

What checking would cost, and who would pay for it

The reading order is fixed, as it is for the headline figure: the factor first, the amount second. The factor depends on two volumes only, both published; the amount depends in addition on cost assumptions, and that is where the debatable part of the costing sits.

> Bringing the checking of French assessments up to the 2% floor applied in England and Wales would multiply the number of checking operations by 21.1: from 3,819 operations in 2023, a figure published by the Cour des comptes in its report of 3 June 2025, to 80,448 a year, the latter being 2% of the 4,022,415 dwelling assessments published as open data for 2024, counted on 15 August 2026. This factor depends on volumes alone; it is invariant to the unit cost assumed.

⚠️ The two volumes this factor sets in relation do not share a vintage, **and that is deliberate**: the system as it actually operated is measured against a floor applied to the most recent volume. The sentence writes it on both sides.

> Bringing the checking of French assessments up to the 2% floor applied in England and Wales would represent between €20.8 million and €40.6 million a year, that is between €5.2 and €10.1 per assessment: the lower bound rests on a cost estimated at €258 per checking operation, the upper bound on one sixth of the €3,025 excluding tax that one surveillance cycle costs according to the Cour des comptes for 2024, that cycle comprising six operations, that is €504.17 per operation. These are declared cost assumptions and a division, not published prices. This spending would be borne by the industry and passed on in the price of the assessment, and therefore by households: it falls neither under State budget appropriations nor under tax expenditure.

⚠️ **Both bounds are declared assumptions, not observed prices**: the lower bound takes an estimated unit cost, the upper bound divides by six a cycle cost published by the financial jurisdiction. The computation can be redone from the sentence alone — that is why it names the cycle cost, and not the rounded unit cost derived from it: **rounding that unit cost loses the published amount**.

A central administration produced, on a neighbouring object, an order of magnitude that is neither ours nor a validation of ours:

> The impact assessment produced by the DHUP, the housing directorate of the French ministry, for the order of 20 July 2023, quoted by the Cour des comptes in its report of 3 June 2025, puts the additional cost of the certification reform at €5 per assessment for initial certification and €3 for renewal, that is an increase of 2 to 3%. That additional cost is costed per assessment, meaning it is already passed on in the price paid by the household: like the costing of the 2% floor, it is borne by the industry and falls neither under State budget appropriations nor under tax expenditure. This is not the same object as costing a 2% audit floor: it is an order-of-magnitude cross-check produced by a central administration, not a validation of that costing.

Two caveats close this costing. They are declared here, and not in an appendix, because a reader redoing the computation will meet them before we do:

> The study publishes no rate of checked assessments in France for 2024 or 2025: the volumes that circulate for those two years — some 8,000 checks in 2024, a target of 10,000 in 2025, and the 0.20% rate derived from them — are attributed to the Cour des comptes without appearing in its report of 3 June 2025, as verified against its full text. The only rate the study publishes is for 2023.

> The study has not opened the orders that set the minimum checking rates for energy saving certificates: the source of those rates is the annual report published by the French directorate-general for energy and climate, and the study attributes them to that report, not to the orders themselves.

Who pays for energy retrofit

The total that follows **is not a total of State spending**. It is an aggregate of four kinds, only one of which comes from voted appropriations. Its primary source is the budget annex on the financial effort for energy retrofit, which the sentence names and whose outturn regime it gives year by year; its scope covers buildings as a whole, and not dwellings alone.

> Between 2019 and 2026, €65.6 billion will have been collectively mobilised in France for the energy retrofit of buildings — all buildings, residential and non-residential, private and public: €18.4 billion of State budget appropriations, €15.0 billion of tax expenditure, €6.6 billion of other public resources, and €25.6 billion levied on energy bills through energy saving certificates, which are not State spending. The figure is that of the annex to the 2026 finance bill on the State's financial effort for the energy retrofit of buildings, with 2019 to 2024 as outturn, 2025 as forecast and 2026 as bill. Direct household spending — the assessment, the energy audit, the out-of-pocket share — is counted nowhere and is not added to this total.

> The largest funder of energy retrofit in France is not the State budget: of the €65.6 billion mobilised from 2019 to 2026, energy saving certificates account for €25.6 billion, that is 39.0%, against €18.4 billion of budget appropriations. That share has never been voted as spending — it is levied on gas, electricity and fuel bills, to the tune of €164 per household in 2023 according to the Cour des comptes — and the Conseil d'État has ruled, in decision no. 375467 of 9 March 2016, that the scheme does not institute an advantage granted directly or indirectly through State resources.

⚠️ For the resource levied on bills, the wording used is **"compulsory collective cost"**. This is not a verbal precaution: an administrative court has held that no advantage is thereby granted through State resources, and the sentence cites its decision and its date.

What this total does not license anyone to say:

> The study does not say, and cannot say, that the sums mobilised for energy retrofit are badly spent because the assessment is little checked: that link is neither demonstrated nor demonstrable with the public data available. What the study establishes is a defect of instrumentation — the absence of the indicators that would make it knowable.

Who owns the dwellings rated F or G

Primary source: two separate workbooks from the French housing ministry's statistical service — the one breaking the stock down by band and by tenure, and the one describing ownership by individuals. The sentences name that service, the stock date, the geographical field and the publication date; the shares were recomputed from the workbooks, not taken from a press release.

> One in two French dwellings rated F or G is a house lived in by its owner: 53.13% of the 3,914,700 main residences rated F or G, that is 2,079,800 owner-occupied houses, as at 1 January 2025, in mainland France, according to the statistical service of the French housing ministry, published on 12 November 2025. No letting ban applies to them; their owner remains subject to the assessment and to the energy audit on sale, and the only instrument that reaches them is the discount on resale.

> In the private rented sector held by individuals, 17.3% of dwellings rated F or G — 151,300 out of 874,000, that is one in six — belong to a landlord aged over 80, who holds only 13.5% of that stock; the figure is that of the statistical service of the French housing ministry, stock as at 1 January 2025, mainland France, published on 12 November 2025. Measured against the whole private rented sector, the same numerator would give 13.2%.

⚠️ **The tenure status behind these breakdowns is observed three years before the stock it is applied to.** The breakdown is publishable; **it supports no dynamic reading** — this is precisely the defect of instrumentation described in the last section of this strand.

Two restraint sentences go with these two:

> The study publishes no figure on the income of owners of F- or G-rated dwellings, nor on that of landlords, and never converts a landlord's age into an income level: it does not say that these dwellings are concentrated among low-income households, the link between a municipality's share of F- or G-rated dwellings and the income of its residents being minus 0.075, measured on municipal sales. What is socially unequal in its results is the discount, not the frequency.

> The study takes no position on the share of F- or G-rated dwellings held by institutional landlords: the French classification does not distinguish legal forms — the only category available lumps the family property company together with the listed property fund — and the rates are near-identical from one form to another. The point is not measurable, and the study does not publish it.

The discount is a price effect, and the sentence says so

Primary source of the transactions, scope and vintage. This provenance appears in neither of the two discount sentences quoted below: it is stated here, in the sentence that follows, established on 18 August 2026 when a caveat that had remained open until then was closed. The inclusion criterion for the municipalities retained is in the first discount sentence.

> The municipal discounts in this study are measured on the French land transaction database (demandes de valeurs foncières) of the directorate-general of public finances, matched to the assessments of the ADEME open file through the national building database of the CSTB, vintage 2025-07-a — land-transaction extraction of April 2025, assessments of September 2025, freeze of 13 June 2026, all three producers publishing under Licence Ouverte 2.0. The match is made at building-group level and not at sale level: the band carried by a transaction is that of the dwelling representative of the group, which is why the only segment published is the detached house. The filters applied are the strictly single lot, the rejection of mixed house-and-flat transactions, the rejection of any price per square metre outside the range of 200 to 50,000 euros, and the exclusion of 9,402 groups with fictitious geometry. The volumes measured are 1,784,237 matched transactions ingested, 956,923 retained after the single-lot filter and 825,719 houses; the 452 publishable municipalities carry 69,489 sales of D-rated houses and 27,566 sales of F- or G-rated houses. No date filter is applied and no lower vintage bound is declared: this field is an observable sub-stock, and since the total number of transactions, matched or not, is computed nowhere, no share of matched sales can be derived from it.

⚠️ **The figures in that sentence are MASSES, and each counts a different object**: building groups, transactions, sales inside the publishable municipalities. **None of them divides by another.**

- ⛔ **This is not a matching of a sale with the assessment of the dwelling sold**, and the sentence

above says so: on one side a transaction representative of the group, on the other a representative assessment. That is acceptable for the detached house, **the only segment published here**, and it is the

reason why flats are out of scope.

- ⚠️ **The matching rate does not exist, and it will not exist here**: its denominator is computed

nowhere in the chain, the sentence above says so, and no share of matched sales can therefore be put forward. The field declares itself for what it is, **an observable sub-stock, and not the market**.

- ⚠️ **What the metric is**: a ratio of median prices per square metre by band, computed within each

municipality. **It is not a hedonic regression** — no control for location within the municipality, for age of the building or for period. The notarial study used as an oracle for comparison is one.

- **Income**: the standard-of-living measure the sentence names, with its scheme and the vintage

of the territory comparator.

> In the tenth of French municipalities where houses sell for the least — a median price of €1,199 per square metre for a D-rated house —, an F- or G-rated house sells for 13.5% less per square metre than a D-rated house in the same municipality; in the tenth where they sell for the most — €5,766 per square metre —, it sells for 5.4% more. The gap rises up to the eighth price decile, then flattens out at around plus 5%. Measured on 452 French municipalities with at least 50 sales of D-rated houses and 30 sales of F- or G-rated houses, houses only, the discount computed within each municipality on median prices per square metre.

> What the discount follows is the price level of the local market, not the income of its residents: across the 452 municipalities measured, the correlation between the discount and median income is plus 0.333, but it falls to minus 0.111 once price is controlled for, and to minus 0.066, not significant, across the 348 municipalities outside the Île-de-France region; in a weighted regression, the income coefficient goes from plus 0.254 on its own to minus 0.063, not significant, as soon as price enters the model, while the price coefficient stays at plus 0.154. Municipalities in the bottom income decile in fact show a premium and not a discount — plus 13.5% in Sevran, plus 12.7% in Bondy, plus 23.2% in Mantes-la-Jolie. Income is INSEE's median standard of living, Filosofi 2023, territory comparator, August 2026 edition.

These two sentences are inseparable, and in both directions. The first carries the rule that brings a municipality into the measurement — a floor of sales per band, houses alone, a gap computed within each municipality; the second does not write it. The second carries what forbids reading the first as a statement about residents' income; the first does not carry that. Read alone, one would give a population size without its selection criterion, the other could be read backwards.

⚠️ **One and the same rate appears three times in this strand, on three different objects and with two signs.** It denotes in turn a negative price gap in the cheapest tenth of municipalities, a positive gap in a municipality of the poorest tenth, and a share of stock held according to the landlord's age. **A figure is validated only with its sign, its object, its scope and its sentence** — all four, not three.

What this measurement does not license anyone to publish:

> The study publishes no national discount for F- or G-rated dwellings: a national figure mixes a gap between municipalities with a gap within a single municipality, and until the two are separated it does not measure the loss of value of a dwelling. What the study publishes is the discount measured within each municipality.

Withdrawal from letting: what France cannot measure

> France banned the letting of G-rated dwellings on 1 January 2025, and its monitoring indicator rests on a tenure status observed on 1 January 2022: the statistical service of the French housing ministry itself writes, in its methodological note of November 2025, that its estimate "therefore does not take account of any changes of use, linked in particular to the bans on letting worst-rated dwellings". The 1,146,700 F- or G-rated dwellings in the private rented sector, the figure quoted everywhere, derive from it. There is therefore no official first assessment of that ban, and none can come out of this source.

⚠️ **This is a defect of instrumentation, not an error by the statistical service**: it declares it itself, in the note the sentence quotes, and the sentence attributes it to them.

> What French statistics measure and publish on F- or G-rated dwellings is a fall of 327,000 units between 1 January 2024 and 1 January 2025, of which close to 40% is explained by the reform of the assessment calculation for small floor areas, and an official simulation of 700,000 fewer dwellings on 1 January 2026 owing to the change in the primary-energy conversion factor for electricity, which would bring the stock concerned to 3.2 million dwellings, that is 10.4% of main residences. The rest of the fall mixes retrofit, sale, demolition and noise in the flow of assessments: it is not a count of retrofitted dwellings.

> On the English private rental market, an academic study published in December 2025 measures no effect on the rents of F- or G-rated dwellings and, on exits from the rental stock, an effect of at most 0.62% of annual turnover — its authors themselves attributing part of that movement to tax and tenancy causes unrelated to energy efficiency. It is an upper bound, not an identified effect.

⚠️ The English measurement above **has no French counterpart to compare it with**: no French value for withdrawal exists, and the matched-comparison rule would rule it out in any case. Its full identification — authors, title, population sizes — appears in neither of the two official sources used by the study; it is therefore quoted here without an author's name.

> The study publishes no figure for dwellings withdrawn from letting in France following the letting ban, and offers no estimate of it: that quantity is measurable in no French public source to date, the reference statistic resting on a tenure status observed on 1 January 2022, three years before the ban came into force.

> A figure for G-rated dwellings said to have left the rental market circulates, attributed to the French national retrofit observatory by commercial websites; it is nowhere to be found, to date, in any open publication of that observatory or of the statistical service of the French housing ministry, and the study does not repeat it in any form, however hedged. Its value is not reproduced here, and that is deliberate: naming it would make it quotable.

⚠️ **The absence check is dated 18 August 2026.** What is established is that no open publication carried that value on that date; the statement does not hold for the future. The value itself is reproduced nowhere, and that is deliberate: naming it, even to reject it, would make it quotable.

What the study does not say

What follows is not a list of rhetorical precautions: each line corresponds to a measurement that was not made, or to an inference the data does not support.

> The study produces no statistic by practitioner, by firm, by software or by accreditation body, on either side of the Channel: on the French side, the data that would make it possible does not exist after July 2021; on the England and Wales side, it exists and the study declines to produce it.

> Bunching is not evidence of intent, nor a statement about individual behaviour: it is a property of the distribution of a file of several million rows, and it is never a statement about any particular case.

⚠️ **A restraint sentence was withdrawn from here on 19 August 2026, and the reason must be stated.** It declared that the study took no position on what French law provides — or does not provide — when a landlord reaches a given level of spending, and it set out its own condition for lifting: establishing that state of the law from the primary texts. **That has been done.** The state of French law is now quoted in full above, under "The spending cap, the exemptions register, and the second French checking channel". Keeping here the declaration that nothing is known of it would mean publishing, next to the sentence that establishes it, the one saying it is not established.

> The study takes no position on the mechanism of the rescaling — who rescaled, under which text, with what publicity: the fact is measured, the mechanism is not.

> The study takes no position on the French overseas départements: they account for 9,320 certificates in the stock, an implausible number, and they are excluded from all publication.

> The study takes no position on energy savings: what it measures is position within the distribution of declared values, not works actually carried out. The wording retained is "do not cross the threshold".

Two neighbouring points are **no longer in that position**, and it must be written here so that this section does not contradict the rest of the note: the annual audit floor for assessments and the share of assessments actually inspected are documented by **named primary sources, external to the two reference sources of the study**. The sentences that carry them, with their source and their date, are quoted in full

above, in the section on the policy and social strand — the England and Wales floor and the nature of the text that sets it, what it represents by volume, what the French arrangement supervises, and the two counts of the French rate with the gap between them. This is neither law in force nor a measurement of the study.

What remains **to be sourced** is narrower, and is stated exactly. On the England and Wales side, the rate **actually achieved** is not published: only the floor is, together with the volume it represents, and a floor is never to be read as an observed rate. On the French side, the study publishes a rate for one year only, the restraint sentence quoted above naming the volumes that circulate for the two following years in order to reject them.

The other restraint sentences are quoted in full where they are useful: what the excess does not identify, in one page; the reason for a deactivation and the exemptions register, in the section on the asymmetry; announced British law, in the same section; the classic time placebo, in the section on sources; the unmatched comparison and what the inoperative-label control does not establish, in their respective sections.

The restraint sentences of the policy and social strand are likewise quoted in full where they serve: the absence of a checking rate for the two unsourced years and the orders that were not opened, under the costing of the audit floor; what the study does not say about the use of the sums mobilised, in the section on funding; owners' income and institutional ownership, in the section on ownership; the national discount, in the section on the discount; the impossibility of measuring withdrawal from letting and the unverifiable value circulating about it, in the last section of this strand.

Licences, attribution, declared interest

These are obligations, not customs. A figure without a source and a last-update date is **outside the licence**.

French side — Licence Ouverte / Open Licence 2.0 (Etalab). The text requires attribution of the information: **its source, and the date of the last update of the information reused**. The exact wording for the main corpus is the following, and it is reproduced without removing anything from it:

> Source: ADEME, energy performance assessment data for existing dwellings (2021 method). Snapshot of 11 June 2026, 16,273,573 certificates, last assessment issued on 1 June 2026. Licence Ouverte / Open Licence 2.0.

Second channel, used for the external coverage control only — a licence mention, to be kept distinct from the main corpus: source ADEME, "DPE Logements existants (depuis juillet 2021)" dataset, `https://data.ademe.fr/datasets/dpe03existant` ; monthly series collected on 16 August 2026; last-update date declared by the portal: 12 August 2026; licence declared by the portal: Licence Ouverte / Open Licence version 2.0.

⚠️ **The two channels have neither the same population size nor the same scope** — one is a filtered relational snapshot, the other the published flat dataset, updated since. That is precisely why the section on the population compares them, and why it concludes that the measured gap is a conformity check and **nothing else**. One does not stand for the other.

The Licence Ouverte also requires that reuse must not mislead third parties as to the content of the information, its source and its update date, and that the attribution must confer neither official status on

the reuse nor any recognition or endorsement by the licensor.

British side — Open Government Licence v3.0. The wording is **mandatory and is not translated**, including in a French-language publication:

> Contains public sector information licensed under the Open Government Licence v3.0.

⚠️ Two exclusions respected: the licence does not cover personal data; and on the England-and-Wales register, address fields fall under a separate notice. **The study publishes no address** — and that holds in the annexes too.

Figure rule, applied without exception:

> Every figure carries, in its footer, the field covered, the source and the extraction date, and every rate is accompanied by its population size.

Declared interest:

> The study is produced by OneDpe (RIANN SAS), a publisher of tools for analysing energy performance assessments. The commercial interest is declared, not concealed.

Log of corrections

A reader who saw an earlier version of the study must be able to understand what changed, and why. **Eleven withdrawals, one lifting.** The first eight bear on the statistical strand, and **seven of the eight are conservative: once corrected, the French figures go up.** The **last three were pronounced on 19 August 2026** and bear on the law, the exemptions register and the spending cap. The withdrawn statements are **described** here, never reproduced: a false wording does not go back into circulation on the pretext of correcting it — which is why neither the erroneous date nor the misnamed denominator is rewritten below.

#	WHAT WAS WITHDRAWN	REASON	DIRECTION	WHAT REPLACES IT
R1	the earlier statement on the rank of the regulatory thresholds within the emissions scale	the tested range is not the entire scale, and the actual rank is not the one written	unfavourable	the full ranking, quoted under "The proportion, model-free"
R2	the non-overlap statement at the threshold that puts a dwelling into band D	false with the conservative interval	unfavourable in scope	the threshold at which the contrast reverses, and the scope of the mass control
R3	the clustered interval for the headline figure	it is not the conservative one	**conservative** — the published interval is far wider	the statement on the widest of the three intervals
R4	every bunching figure on the energy axis measured on the value as published	the scale there is blurred by the coefficient re-expression: the zero was guaranteed by construction	**conservative** — it returned a false negative	the energy-axis measurements, on a reconstituted scale then on the vintage needing no reconstruction
R5	the window-width label on the energy axis	the computation was right, the label was wrong	neutral on value	the energy-axis sentences, which carry the exact window
R6	the France / England-and-Wales ratio used initially	unmatched experimental designs, and it was the least favourable comparison to France of the whole family	**conservative**	the matched ratio, with its two caveats
R7	the earlier statement on the density at non-regulatory multiples of ten	the measurement contradicts that statement, and asserting it invited	**conservative, stronger**	the four-measurement argument under "The round-number objection"

#	WHAT WAS WITHDRAWN	REASON	DIRECTION	WHAT REPLACES IT
		refutation on the most exposed point		
R8	the no-exception form of the statement on the convention check's residual	it is not flat everywhere: one position is an exception, it is explained, and it is falsifiable	**stronger** — the statement becomes refutable and survives the test	the whole form, quoted under "The computation convention, and the control that established it"
R9	the statement dating the opening of the England-and-Wales exemptions register	it kept the **original** commencement date of Part 3 of the 2015 instrument, revoked before it ever took effect; the exact date, for dwellings, is one year later	**conservative** — the register is one year younger than what was written	the sentence on the register and the one on the French side, quoted under "The spending cap, the exemptions register, and the second French checking channel"
R10	the statement that set the registered-exemptions rate against the rented stock of England and Wales as a whole	the referent was right, the **denominator was misnamed**: it is not the whole rented stock but only the subset a national database records as certified — a record the source itself declares partial	neutral on value, exact on the denominator	the sentence on exemption volumes and their exact denominator, quoted in the same section
R11	the restraint sentence declaring that the study took no position on what French law provides, or does not, when a landlord reaches a	it set out its own condition for lifting — establishing that state of the law from the primary texts — and **that has**	**stronger** — the study now establishes what it declined to establish	the sentence on what France has facing it, quoted in the same section

#	WHAT WAS WITHDRAWN	REASON	DIRECTION	WHAT REPLACES IT
	given level of spending	**been done since 19 August 2026**		
✅ L1	**lifted**: the so-called blocking caveat on an unexplained anomaly below each energy-axis boundary	explained and dated; the sentence quoted under "The energy axis" carries the measurement	—	it is no longer published as open

What remains open. The order carrying the conversion factor has not been opened: the study therefore says nothing about the rescaling procedure. And the mass estimator has not been re-run under a **date-aware** boundary regime, whose effect is already measured on the proportion and positive at all four thresholds — so the published figure is, there too, a floor.

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Right of reply: `droit-de-reponse@onedpe.fr` **. Any person or body named or identified by the study may exercise their right of reply under the conditions and time limits set by article 6 IV of French Act no. 2004-575 of 21 June 2004 on confidence in the digital economy.**

*The commitment covers any person or body **named or identified** by the study: being identifiable without being named is enough to give rise to it.*